

whereby said card may be inserted into said card reader and thereafter automatically be positioned in three dimensions for scanning and scanned.

2. A card reader as set forth in claim 1 in which said window is formed of transparent plastic material.

3. A card reader as set forth in claim 1 in which said card driver is a pair of frictional rollers positioned within said housing at an angle to be longitudinal dimension of said card and means for driving said rollers.

4. A card reader as set forth in claim 3 in which said alignment means also includes means for driving said rollers in a reverse direction to eject said card from said reader.

5. A reader adapted to read a data strip imprinted on a surface of a card, said card being of predetermined size and shape and said data strip being in a predetermined position on said card, said reader including

a housing, a tray positioned within said housing to receive said card and to hold said card for scanning, said tray having a window and including positioning guides corresponding to adjacent edges of said card,

positioning means for receiving said card, pressing adjacent edges of said card against said guides, pressing said card surface bearing said data strip against said window, and holding said card motionless during scanning,

a bi-directional optical scanner positioned within said housing for scanning said data strip through said window,

a sensor adapted to detect when said card is in position to be scanned, and

a control circuit, actuated by said sensor, to start operation of said scanner,

whereby said card may be automatically positioned for reading and the data strip thereon may be read.

6. A reader as set forth in claim 5 in which said positioning guides are perpendicular to one another and are positioned to receive the leading edge and one side edge of said card.

7. A reader as set forth in claim 6 in which said window is formed of transparent plastic material.

8. A reader as set forth in claim 5 including an inlet slot in said housing proximate to said tray for receiving said card and a detector to sense the presence of a said card inserted in said inlet slot and to actuate said positioning means.

9. A reader as set forth in claim 5 in which said positioning means is a plurality of driven rollers having parallel axes, said axes being at such an angle as to cause said rollers to direct said incoming card against both of said guides.

10. A reader as set forth in claim 9 in which said rollers have a surface providing for frictional, but slipping, engagement with said card.

11. A reader as set forth in claim 5 in which said positioning means is reversible and can thereby eject said card from said housing after said card has been scanned.

12. A reader as set forth in claim 11 including an ejection guide positioned on said tray for directing said card out of said housing, said ejection guide being spaced from said positioning guides by a distance greater than the corresponding dimension of said card,

so said card fits loosely between said ejection guide and its corresponding said positioning guide.

13. A reader as set forth in claim 5 in which said tray is removably held in said housing, whereby other said trays may be substituted for it to accommodate a different card.

14. In a reader for a card bearing a data strip and requiring accurate three-dimensional alignment, that improvement including a card-positioning tray, alignment guides perpendicular to one another on said tray and corresponding to adjacent edges on said card, a fixed scanning window in said tray associated with said guides and proximate thereto, a bi-directional optical scanner, means for moving said scanner in scanning motion over said scanning window, and means remote from said scanning window for receiving said card and moving said card to said scanning window, and means for pressing said card against said window and said guides and holding said card immobile during scanning, whereby said card may be held in three-dimensional alignment during scanning and scanned bi-directionally.

15. A reader adapted to read a data strip imprinted on a surface of a card, said card being of predetermined size and shape and said data strip being in a predetermined position on said card said reader including

a housing, a tray positioned within said housing to receive said card and to hold said card for scanning, said tray having a window and including positioning guides corresponding to adjacent edges of said card, said tray being removably held in said housing,

positioning means for receiving said card, pressing adjacent edges of said card against said guides, pressing said card surface bearing said data strip against said window, and holding said card motionless during scanning,

a bi-directional optical scanner positioned within said housing for scanning said data strip through said transparent surface,

a sensor adapted to detect when said card is in position to be scanned, and

a control circuit, actuated by said sensor, to start operation of said scanner,

whereby said card may be automatically positioned for reading, said data strip thereon may be read, and an other tray may be substituted to accommodate a different card.

16. In a reader for a card bearing a data strip and requiring accurate three-dimensional alignment, that improvement including a card-positioning tray, alignment guides perpendicular to one another on said tray and corresponding to adjacent edges on said card, a scanning window in said tray associated with said guides and proximate thereto, a bi-directional optical scanner, means for moving said scanner in scanning motion along said scanning window, and means for receiving said card pressing said card against said window and said guides, and holding said card immobile during scanning, said last-named means including a pair of driven rollers having axes which are parallel to one another and which are at an angle to the longitudinal dimension of said data strip,

whereby said card may be held in three-dimensional alignment during scanning and scanned bi-directionally.

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